

ATTACHMENT J.4.88

**PACKAGING LOW-LEVEL RADIOACTIVE WASTE IN ISO CONTAINERS
FOR SHIPMENT TO THE NEVADA TEST SITE**

PT-0006

PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT

PT-0006

Effective Date: 05-15-97

Originator (Subject Expert):

S. Stierhoff
S. Stierhoff

4/29/97

Date

Checker Concurrence:

J. Edney
J. Edney

4/29/97

Date

Approved By:

M. West

4/29/97

M. West, Packaging and Transportation (PT) FAM

Date

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

Fluor Daniel Fernald, Inc.
P. O. Box 538704
Cincinnati, Ohio 45253-8704

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 1 of 18	

Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
1.0	PURPOSE	3
2.0	SCOPE	3
3.0	REFERENCES	3
4.0	RESPONSIBILITIES	3
5.0	GENERAL	4
6.0	PREREQUISITES	5
7.0	PROCEDURE	6
	7.1 INSPECTING WASTE	6
	7.2 PREPARING AN EMPTY ISO CONTAINER	7
	7.3 FILLING THE ISO CONTAINER WITH WASTE MATERIAL	7
	7.4 SECURING THE ISO CONTAINER	9
	7.5 WEIGHING THE FILLED ISO CONTAINER	9
8.0	RECORDS	11
9.0	DRIVERS	11
10.0	DEFINITIONS	11

LIST OF TABLES

TABLE 1 - WEIGHT LIMITATIONS	12
------------------------------------	----

LIST OF ATTACHMENTS

ATTACHMENT A - PROHIBITED MATERIALS	13
ATTACHMENT B - PROCESS AREA SCRAP CHECKLIST	14
ATTACHMENT C - PROCESS AREA WASTE VEHICLE CHECKLIST	15
ATTACHMENT D - ITEM PRODUCTION/CERTIFICATION/IDENTIFICATION	16
ATTACHMENT E - MATERIAL PACKAGING LIST	17

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 2 of 18	

ISSUE AND REVISION SUMMARY

Revision	Date	Description of Issue or Revision
0	12-14-92	New procedure required for shipping LLRW in International Shipping Organizational (ISO) containers per Request No. S92-175, initiated by M. Hundley. SSOP-0079, SSOP-0078, and SSOP-0075 replace SSOP-0024.
1	10-04-94	Revision needed to add Tables 1 through 4, add ES&H requirements, update Figure 4, clarify role of Quality Assurance, and incorporate SC93-006 per Request No. S93-072, initiated by Lori Hurst. This document supersedes SSOP-0078, dated 12-14-92, Rev. 0.
2	03-30-95	Major Revision to omit the labeling, marking, and inspecting sections; revise the container preparation activities; and outline the latest responsibility changes per Request No. S94-174, initiated by B. Giesl. This document replaces SSOP-0078, dated 10-04-94, Rev. 1.
3	05-15-97	Major revision to incorporate IC95-032, IC95-044, IC95-066, and IC96-071 and update procedure per Request No. WR-0357; initiated by S. Stierhoff. This document supersedes PT-0006, dated 03-30-96, Rev. 2.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 3 of 18	

1.0 PURPOSE

This procedure provides the instructions for packaging low-level radioactive waste (LLRW) in ISO containers for shipment.

2.0 SCOPE

- 2.1 This procedure outlines the steps for (1) inspecting the waste to be packaged, (2) preparing the empty ISO container, (3) filling the ISO with waste, (4) securing the ISO, and (5) weighing the ISO.
- 2.2 The packaging operation is applicable to Fernald Environmental Management Project (FEMP) personnel (including subcontractors) responsible for packaging LLRW in ISO containers at any packaging location of the FEMP site.

3.0 REFERENCES

- 3.1 EW-0006, Management of Debris
- 3.2 EW-0001, Completing the Material Evaluation Form
- 3.3 PT-0003, Control and Movement of Containers at the FEMP
- 3.4 PT-0011, Evaluating Low Level Radioactive Waste (LLRW) Bulk Waste Streams for Shipment
- 3.5 MCA-I-018, Completing the Item Production/Certification/Identification Form
- 3.6 20-C-912, Checking Scale Operation
- 3.7 20-C-111, Transportation of Low Level Radioactive Waste and Nuclear Material

4.0 RESPONSIBILITIES

- 4.1 Packager inspects waste and containers and packages waste per this procedure. Complies with any additional requirements specified by S&H.
- 4.2 Waste Tech ensures the box is empty and in acceptable condition before packaging. Ensures contents of ISO Containers. Coordinates the movement of containers. Ensures proper documentation is filled out and correct. Follows all applicable procedures.
- 4.3 Waste Characterization (WC) provides documentation supporting characterization of all LLRW packaged under this procedure.
- 4.4 Inventory Control provides bar code labels. Maintains records and inventory of ISO containers. Tracks movement of empty and full containers.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 4 of 18	

- 4.5 Safety and Health (S&H) provides a Radiological Safety Technician, as requested. Determines appropriate respiratory equipment and any other employee protection.
- 4.6 Supervisor of the Waste Generation Area specifies applicable scale procedures and standard tare weight of packages. Ensures packaging materials are available for packagers. Ensures that only trained personnel package waste material. Ensures that personnel who package waste for shipment follow applicable procedures. Contacts S&H to determine the appropriate respiratory protection for the process being performed and the radiological surveys required for materials moving in and out of contamination areas. Contacts Radiological Control (RC) for a Radiological Work Permit (RWP) or other safety permits and ensures permits are obtained and signed prior to performing work. Provides packagers with the required respiratory protection and other personal protective equipment (PPE). Ensures Task Order is completed and details the scope of work to be done. Ensures doors are secured after packaging so unknown materials are not added. Ensures waste packages are weather-protected. Contacts S&H prior to opening any container of unknown radioactive material.
- 4.7 Motor Vehicle Operator (MVO)/Heavy Equipment Operator (HEO) delivers empty boxes to designated packaging location. Supports packager as needed per this procedure.
- 4.8 Waste Acceptance overviews packaging operation to verify compliance with this procedure.
- 4.9 Quality Assurance coordinates and performs surveillances and audits of the program.

5.0 GENERAL

- 5.1 Any circumstance that could have resulted in an intake of radioactive materials by inhalation, ingestion, or absorption shall be immediately reported to a Supervisor. The Supervisor shall immediately report the circumstance of possible radioactive materials intake to S&H RC Department for evaluation. When the suspect isotope is uranium, the involved employees shall report to the Urine Sampling Station at the end of their respective shift to complete an FS-F-1458, "Investigation Report" (IR), and submit an incident urine sample. The involved employees shall also report to the Urine Sampling Station at the start of their next shift to submit a follow-up urine sample. When the suspect isotope is other than uranium, the involved employee(s) shall report to the Dosimetry Section of RC for further determination of actions. Employees are responsible for complying with appropriate requirements as specified by authorized S&H staff.
- 5.2 The following substitutions should be made for Contaminated Construction Removal Action Waste and Waste Stream ONL0000000002:

(Waste characterization may be performed using EW-0006, "Management of Debris.")

Page 1 of 7

FLUOR DANIEL FERNALD
SITE DOCUMENT SYSTEM

1. ICP No. IC97-042

2. Effective Date: 07-22-97

3. Expiration Date: N/A

INTERIM CHANGE TO A PROCEDURE/DOCUMENT

4. AFFECTED PROCEDURE/DOCUMENT NUMBER/REVISION/DATE
PT-0006 / REV 3 / 5-15-975. AFFECTED PAGE NUMBER:
PAGE 56. PROCEDURE/DOCUMENT TITLE:
PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT7. SPECIFIC ACTIVITY/AREA AFFECTED:
PACKAGING OF ISO CONTAINERS

8. CHANGE:

6.8 Obtain the following items/supplies prior to performing the packaging operation:

appropriate safety protective equipment
absorbent pads
3/8 inch x 4 foot x 8 foot plywood sheets, CDX grade
paint stick
blue, tan or white paint (as applicable)
clean rags
1-1/2 inch black metal bands, clips and banding equipment

9. JUSTIFICATION:

Cost reduction in use of a thicker but lower grade plywood sheathing

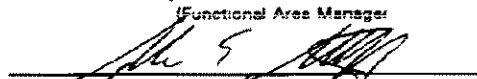
APPROVAL SIGNATURE:


(Functional Area Manager)

7/3/97

(Date)

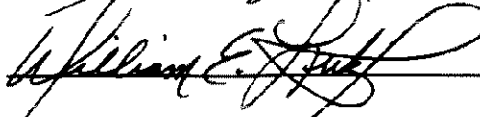
SUBJECT EXPERT:



7/3/97

(Date)

CHECKER:



7/7/97

(Date)

FILING INSTRUCTIONS: File this form facing page 5, Procedure/Document No. PT-0006
(Effective Date: 5-15-97/Revision No. 3)

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 5 of 18	

- A Packager could be the subcontractor or FEMP personnel.
- A Supervisor could be the Construction Team Management Representative if a project is subcontracted.

5.3 DOT label lettering shall be 2 inches high by 1/4 inch wide.

6.0 PREREQUISITES

- 6.1 Standard safety glasses [American National Standards Institute (ANSI) Z87.1] with side shields shall be worn unless other eye protection is specified.
- 6.2 Respiratory protection provided by the Supervisor shall be worn when required.
- 6.3 Gloves shall be worn when handling containers, operating equipment and when handling rough, sharp-edged, or contaminated material.
- 6.4 Neoprene rubber gloves shall be worn when handling HEPA type filter vacuum cleaners, or a vacuum system approved by S&H.
- 6.5 Vacuum cleaners with HEPA type filters or a current di-sec, octyl phthalate (DOP) test label properly affixed to vacuum shall be used for cleaning.
- 6.6 An RWP must be approved and current.
- 6.7 Face shields shall be worn when removing lids or bungs of containers filled with liquids or during operations where personnel could be splashed with liquids.
- 6.8 Obtain the following items/supplies prior to performing the packaging operation:
 - appropriate safety protective equipment
 - absorbent pads
 - 1/4-inch x 4-foot x 8-foot plywood sheets (all grades)
 - paint stick
 - blue, tan, or white paint (as applicable)
 - clean rags
 - 1-1/2 inch black metal bands, clips, and banding equipment
- 6.9 "Prohibited Materials" list (Attachment A) shall be displayed in the packaging area.
- 6.10 The FS-F-4178, "Process Area Scrap Checklist" (Attachment B), shall be displayed in the packaging area when packaging Waste Stream ONL0000000001 process area scrap.
- 6.11 A minimum of two personnel are required to package waste.
- 6.12 Packagers shall be qualified in use of PPE.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 6 of 18	

- 6.13 Employees shall be briefed on and sign the RWP in black ink before performing work.
- 6.14 An FS-F-3252, "Material Evaluation Form (MEF)," shall be initiated (per EW-0001) prior to filling container. Waste Characterization will assign the material an MEF number before final characterization is complete, which occurs after sampling. Any Waste Acceptance Criteria (WAC) for which compliance cannot be verified by Sampling and Analysis shall be addressed in the Task Order. Activities needed to bring the waste into WAC compliance (e.g., decant liquid, use additional absorbent, or packaging limitations) shall be described in the Task Order.

7.0 PROCEDURE

7.1 INSPECTING WASTE

Waste Tech

1. Ensure that WC has initiated an MEF.
 - A. If the waste characterization has not been initiated, contact WC for disposition before continuing procedure.
- OR**
- B. If the waste characterization has been initiated, package per this procedure.

Packager

2. Ensure the waste type to be packaged is not on the "Prohibited Materials" list (Attachment A) and can pass either the "Process Area Scrap Checklist" (Attachment B) or the "Process Area Waste Vehicle Checklist" (Attachment C), when applicable.
 - A. If the waste type is on the Prohibited Materials List, or does not pass the "Process Area Scrap Checklist" or the "Process Area Waste Vehicle Checklist," notify Supervisor or set aside for alternative disposition before continuing procedure.
- OR**
- B. If the waste type is not on the Prohibited Materials List and passes either the "Process Area Scrap Checklist" or the "Process Area Waste Vehicle Checklist," continue procedure.

NOTE: Property that has bar code labels must be accompanied by an FS-F-0563, Property Disposal Request, or letter approving them for disposition. (Items should be listed on the Material Packaging List.)

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 7 of 18	

3. Visually check waste for free liquid (including ice).

A. If free liquid is present, notify Supervisor to determine appropriate method for eliminating free liquid before continuing procedure.

OR

B. If free liquid is not present, continue procedure.

7.2 PREPARING AN EMPTY ISO CONTAINER

Waste Tech

1. Request, obtain, and verify delivery and acceptability of approved containers for packaging per procedure PT-0003.

Packager

2. Spread two layers of absorbent pads on container floor, permitting no gaps and allowing padding to extend a minimum of 3 inches upward along each wall.

NOTE: Doorway edge shall remain free of padding at this time.

3. Starting at the back of container, place plywood sheets over the pads, overlapping, across the container floor to the doorway.

4. Inform Supervisor the container preparation is complete.

Supervisor

5. Notify Waste Acceptance that the container has been prepared.

Waste Acceptance

6. Conduct periodic overview of container preparation per applicable department procedure, as required.

7.3 FILLING THE ISO CONTAINER WITH WASTE MATERIAL

Waste Tech

1. Maintain communication with Waste Acceptance to permit them to view filling of containers.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 8 of 18	

Packager

<p><u>WARNING</u></p> <p>IF SPECIFIED IN THE RADIATION WORK PERMIT (RWP), RESPIRATOR AND OTHER PERSONAL PROTECTIVE EQUIPMENT (PROVIDED BY THE SUPERVISOR) SHALL BE DONNED PRIOR TO FILLING CONTAINERS TO PREVENT INHALATIONS AND EXPOSURES.</p>

NOTE: Any waste encountered in the packaging operation not covered by the MEF or that does not meet either the "Process Area Scrap Checklist" or "Process Area Waste Vehicle Checklist" requirements shall be set aside and shall not be packaged without the Supervisor contacting WC for disposition instructions.

2. Load waste into container as tightly as possible ensuring the container is within the specified weight (see Table 1) and the load is balanced to prevent tipping. (Large items shall be carefully loaded to minimize damage, settling, and shifting during transportation.)

Waste Tech

3. Complete either a "Process Area Waste Vehicle Checklist" (Attachment C) per PT-0011 or a "Process Area Scrap Checklist" (Attachment B), as applicable.
4. Initiate an FS-F-1945-1, "Item Production/Certification/Identification," 65 Card (Attachment D) per MCA-I-018, "Completing the Item Production/Certification/Identification Form."

Packager

5. Complete an FS-F-4879, Material Packaging List (Attachment E).

Waste Tech

6. Calculate tare weight by adding 150 pounds to the weight listed on the Material Packaging List.

Supervisor

7. Notify Waste Acceptance container has been filled.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT	DOCUMENT NO: PT-0006	
<i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	Effective Date: 05/15/97	Revision No. 3
	Page 9 of 18	

Waste Acceptance

8. Perform final inspection of contents and material packing list for verification of materials packaged.

NOTE: This documentation shall include a photograph.

7.4 SECURING THE ISO CONTAINER

Packager

1. If directed by Supervisor, place two sheets of plywood vertically in front of container doorway for shoring.
2. Roll (double-thick) absorbent pads together and place evenly along the floor (maintaining continuous contact with floor) in front of the plywood sheets.
3. Caulk door frame interior and inside edges of each door.
4. Close the container doors.
5. Latch doors ensuring all latching mechanisms are engaged.
6. Band doors securely together with 1-1/4 inch bands spaced to match, locking bar supports at mid-height of the container using two double-crimp seals for each band.
7. Remove excess banding.

Waste Tech

8. Apply a tamper indicating device (TID) to door by threading and locking the metal wire of the seal through the lower door handles.
9. Record seal date and number on the 65 Card.
10. Notify Inventory Control and Transportation when container is filled and is to be moved.

7.5 WEIGHING THE FILLED ISO CONTAINER

Supervisor

1. Specify the scale and the method of transporting the box to the scale.

Heavy Equipment Operator

2. Move container onto a currently calibrated accountability scale.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 10 of 18	

NOTE: A Heavy Equipment Operator is required if items to be moved weigh more than 9,000 pounds.

Packager

3. Inspect the scale to be used per 20-C-912.
4. Weigh container.
5. Fill out weight ticket and transmit to Waste Tech and Inventory Control.
 - A. If box is over 42,000 pounds, notify Supervisor and proceed as directed.
- OR**
- B. If box is less than or equal to 42,000 pounds, continue procedure.

Heavy Equipment Operator

6. Remove container from the scale.
7. Move container to staging/storage area as specified by Supervisor.

Packager

8. Complete a waste movement record and submit to Supervisor per 20-C-111.

Supervisor

9. Complete and sign 65 Card indicating accuracy and completeness, based on Material Packaging List and Process Area Checklist.
10. Sign Section IV of Process Area Scrap Checklist (Attachment B) or Section II of the Process Area Waste Vehicle Checklist (Attachment C).
11. Forward 65 Card, Weight Ticket, Material Packaging List, and Process Area Checklist to Waste Tech.
12. Ensure movements records are completed and submitted to Inventory Control for entry into the Sitewide Waste Information, Forecasting, and Tracking System (SWIFTS) per 20-C-111.

Waste Tech

13. Review, sign, date, and transmit the 65 Card, the Process Area Waste Vehicle Checklist, the Process Area Scrap Checklist, and the Material Packaging List to Inventory Control and Waste Characterization.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT	DOCUMENT NO: PT-0006	
<i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	Effective Date: 05/15/97	Revision No. 3
	Page 11 of 18	

14. Allocate boxes into NTS shipments.

8.0 **RECORDS**

The following documents will be generated as records as a result of this procedure and will be managed according to RM-0022, FEMP Records Management Program Records Management Users Manual:

- FS-F-4178, Process Area Scrap Checklist
- FS-F-3472, Process Area Waste Vehicle Checklist
- FS-F-1945-1, Item Production/Certification/Identification
- FS-F-4879, Material Packaging List

9.0 **DRIVERS**

- 9.1 NTS WAC, Nevada Test Site Waste Acceptance Criteria
- 9.2 49 CFR, Section 173
- 9.3 RM-0012, Quality Assurance Program

10.0 **DEFINITIONS**

- 10.1 **Free Liquid** - Any free flowing liquid or any liquid that readily separates from the solid portion of a waste under ambient temperature and pressure conditions. Ice is also considered a free liquid.
- 10.2 **ISO Container** - An Intermodal container (Dry-cargo Type). Those used at the FEMP typically measure 8-1/2 feet high X 8 feet wide X 20 feet long with two doors on the end. Although frequently referred to as a "Sea/Land" container at the FEMP, an ISO container may be, but is not necessarily, a Sea/Land container. (See Table 1 for specifications.)
- 10.3 **Low-Level Radioactive Waste (LLRW)** - All radioactive waste not classified as high-level waste, spent nuclear fuel, Transuranic (TRU) waste, uranium mill tailings, or Mixed Waste (MW).
- 10.4 **Resource Conservation and Recovery Act (RCRA)** - The Congressional Act that established safe and environmentally acceptable management practices for specific wastes. RCRA requires strict "cradle to grave" control, documentation, and proper management of hazardous wastes.

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 12 of 18	

TABLE 1 - WEIGHT LIMITATIONS

CODE	SHIPPING CONTAINERS	TARE WT (LBS)	WT LIMIT (LBS)
109	Sea/Land - Conventional No. 102"H x 96"W x 238"L Exterior 93"H x 94"W x 232"L Interior	VARIED	42,000 or full
220	Cargo Container 90"-102"H x 90"-102"W x 234"-246"L	VARIED	42,000 or full

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 13 of 18	

ATTACHMENT A - PROHIBITED MATERIALS

PACKAGING GUIDELINES FOR WASTE GENERATOR	
<i>Package has been properly prepared for closing when the following conditions exist:</i>	
<i>No liquids of any kind have been placed in container.</i>	
<i>Heavy/bulky items have been secured within container.</i>	
<i>All available space has been utilized efficiently.</i>	
<i>Prohibited materials (listed below) have been excluded.</i>	
<i>Packaging has not been damaged during loading.</i>	
PROHIBITED MATERIALS AND EXAMPLES	
Compressed Gases	Corrosive Materials
<i>unpunctured aerosol cans</i>	<i>acid or caustic material</i>
<i>gas cylinders with valves or plugs in place</i>	<i>acidic</i>
Free Liquids	Hazardous Waste
<i>water, ice, seepage, condensation,</i>	<i>solvents, petroleum products,</i>
<i>drinks, coffee, juices, pop, soaked rags,</i>	<i>lead, mercury, batteries,</i>
<i>fuel, oil, fluids, solvents, etc.</i>	<i>pesticides, etc.</i>
Enologic Agents	Explosives
<i>medical waste</i>	

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 14 of 18	

Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.

ATTACHMENT B - PROCESS AREA SCRAP CHECKLIST
 Reference MEF # 2701
LOW-LEVEL RADIOACTIVE WASTE
PROCESS AREA WASTE CHECKLIST

SECTION I - GENERAL CONTAINER INFORMATION	
1. PLEASE IDENTIFY THE TYPES OF WASTE IN THE CONTAINER:	
<input type="checkbox"/> Scrap Metal <input type="checkbox"/> Scrap Wood <input type="checkbox"/> Paper/Plastic/Rubber/Cardboard/Canvas/Rope	<input type="checkbox"/> Electrical Equipment <input type="checkbox"/> Glass
* IF OTHER THAN THE ABOVE ITEMS ARE IN THE CONTAINER PLEASE DESCRIBE THE ADDITIONAL WASTE AND THE PLACE OF GENERATION OF THE WASTE.	

SECTION II - GENERAL RESTRICTIONS		YES	NO
1. ARE THERE FREE LIQUIDS IN THE CONTAINER OR WASTE MATERIAL?			
2. DID THE WASTE ORIGINATE FROM A RADIOLOGICALLY CONTROLLED AREA?			
3. IS THE WASTE A KNOWN HAZARDOUS WASTE?			
4. DID THIS WASTE ORIGINATE FROM A HAZARDOUS WASTE MANAGEMENT UNIT?			
5. ARE ALL SURFACE AREAS VISIBLE? IF NOT, WHAT WAS THE MATERIAL FOR AND WHAT DID IT CONTAIN?			
6. ARE THERE EXCESS RESIDUES? IF YES, ANSWER QUESTION 7.			
7. COULD THE EXCESS RESIDUES BE REMOVED AND MANAGED SEPARATELY? IF NO, DESCRIBE THE RESIDUE AND WHERE IT ORIGINATED FROM.			

SECTION III - APPROVED WASTE CRITERIA		YES	NO
1. SCRAP METAL - IS THE WASTE ONE OF THE FOLLOWING: STEEL (INCLUDING STAINLESS), COPPER, ALUMINUM, IRON, BRASS, NICKEL, MONEL, TIN?			
2. SCRAP WOOD - IS THE WOOD NON-PRESSURE TREATED?			
3. PAPER/PLASTIC/RUBBER/CARDBOARD/CANVAS/ROPE - IS THE WASTE ONE OF THE FOLLOWING: PACKING PAPER, PACKING MATERIALS, NEWSPRINT, OFFICE PAPER OR PROTECTIVE CLOTHING GENERATED AT THE PACKAGING/INSPECTION SITE OR ANY TYPE OF PLASTIC, CANVAS OR ROPE?			
4. ELECTRICAL EQUIPMENT - IS THE WASTE ONE OF THE FOLLOWING: NON-ASBESTOS WIRING, CONDUIT, NON-MERCURY SWITCHES OR DRY-TYPE TRANSFORMERS?			
5. GLASS - IS THE WASTE ONE OF THE FOLLOWING: EMPTY GLASS CONTAINERS, INCANDESCENT LIGHT BULBS, WINDOW OR SIGHT GLASS, OR BROKEN GLASS FROM THESE SAME ITEMS?			

SECTION IV - CONTAINER INFORMATION					
1. SPECIFIC DISCERNIBLE ITEMS APPROVED AS LLRW (NON-RCRA) BY WASTE CHARACTERIZATION SECTION:					
WASTE CHARACTERIZATION SIGNATURE			DATE		
2. Packaging Date:	3. Inches Freeboard/Headspace:	4. Container Serial Number:			
5. Container Inventory Number:	6. Container Type: <input type="checkbox"/> SL <input type="checkbox"/> WMS <input type="checkbox"/> DRUM <input type="checkbox"/> OTHER, Specify:				
7. Approved By:			Accepted By:		
(Supervisor Signature/Date)			(Waste Management Section Signature/Date)		
White	White Characterization	3	Yellow	Missing Container ID Label/ID	
Blue	Low Level Waste Material, Not Disposed	4	Green	Waste Generator	

Title: **PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT**

DOCUMENT NO: PT-0006

Effective Date: 05/15/97

Revision No. 3

Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.

Page 15 of 18

ATTACHMENT C - PROCESS AREA WASTE VEHICLE CHECKLIST

Reference MEF # 123

**LOW-LEVEL RADIOACTIVE WASTE
PROCESS AREA WASTE VEHICLE CHECKLIST**

SECTION I						
WASTE EVALUATION				YES	NO	N/A
1. Free from the following fluids:	a. Anti-freeze					
	b. Brake fluid					
	c. Gasoline					
	e. Engine oil					
	f. Power steering					
	g. Differential fluid (rear end)					
	h. Windshield Wiper Fluid					
2. Removed:	a. Radios					
	b. Distributor coils and amplifiers					
	c. Alternators					
	d. Electronic fuel injector circuit					
3. Fuel tank removed						
4. Propane tank removed						
5. Tires Deflated						
6. Tire valve stem removed						
7. Freon pumped/contained for recycling						
8. Auxiliary Hydraulic Unit removed or drained						
9. Oil filter and Gas filter removed and filter receptacles on engine sealed						
10. Batteries removed						
11. All Hoses that contain liquids have been cut and Drained						

SECTION II - CONTAINER INFORMATION					
1. MATERIAL ORIGIN/DESCRIPTION (Provide a detailed description of the materials in the container, including source or origin if available):					
2. Packaging Start Date:		3. Packaging End Date:		4. Inches Freeboard/Headspace:	
5. Container Inventory Number:		6. Container Type: <input type="checkbox"/> S/L <input type="checkbox"/> WMB <input type="checkbox"/> DRUM <input type="checkbox"/> OTHER Specify:			
7. Approved By: (Supervisor Signature/Date)			Accepted By: WPM Signature/Date		

1	White	Waste Characterization	3	Yellow	Material Control and Accountability
2	Blue	Low-Level Waste Handling and Disposal	4	Green	Waste Generator

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 17 of 18	

ATTACHMENT E - MATERIAL PACKAGING LIST

MATERIAL PACKAGING LIST

PACKAGING LOCATION _____ **Date Filled** _____
S
SERIAL NO. _____
INVENTORY NO. _____
TARE WEIGHT _____
RUST? YES _____ **NO** _____
HOLES? YES _____ **NO** _____
CONTAINER TYPE **A** **DRUM** _____ **WMB** _____ **ISO** _____ **.TL** _____
PROHIBITED ITEMS **A** **YES** _____ **NO** _____

CONTENTS

M

P

ARE CONTENTS DRY? _____ **WET?** _____ **DAMP?** _____ **L**
GENERATORS _____ **BADGE #** _____ **WASTE ACCEPTANCE PREP CHECK** **YES** _____ **NO** _____
DATE _____
MINIMUM OF VOID SPACE **E** **YES** _____ **NO** _____

Title: PACKAGING LOW-LEVEL RADIOACTIVE WASTE (LLRW) IN ISO CONTAINERS FOR SHIPMENT <i>Compliance with this procedure is mandatory while performing the activities within its scope. Only a controlled copy may be used in the performance of work.</i>	DOCUMENT NO: PT-0006	
	Effective Date: 05/15/97	Revision No. 3
	Page 18 of 18	

ATTACHMENT E - MATERIAL PACKAGING LIST (cont.)

MATERIAL PACKAGING LIST

Instructions

The following instructions are to be followed when filling out the Material Packaging List:

1. Fill in packaging location, serial number, inventory number, and tare weight.
2. Perform a physical check of the container check for holes and rust and mark accordingly.
3. Mark the container.
4. As the container is being filled, list all items being loaded into container. Be as specific as possible when filling in contents. Ensure no prohibited items.
5. Check if contents of container is "dry," "wet," or "damp" when loaded.
6. Sign after container is completely loaded.
7. Waste Acceptance to check "yes" or "no" in the area for prep check and date as such.
8. Mark minimum of void space "yes" or "no."